BroadSoft Partner Configuration Guide

Grandstream GXV/GXP/BT Series Phones

November 2009

Document Version 1.12

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BroadWorks® Guide

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Document Revision History

Version	Reason for Change
1.1	Introduced document.
1.2	Added GXP-2020 model.
1.3	Updated package support table and device profile table with parameters/features added in Release 14.sp2.
1.4	Updated section 6.2 to include eventlist BLF configuration example.
1.5	Updated section 7 to reflect multiple DTMF selection support in new firmware.
1.6	Edited changes and published document.
1.7	Updates to section 5 (Release 13 device types).
1.8	Edited changes and published document.
1.9	Added new models – GXP2010, GXP1200, GXP280, BT201, GXV3005 and GXV3006 and updated for BroadWorks Release 15.0 validation.
1.10	Edited changes and published document.
1.11	Updated document to include the GXV-3140 model.
1.12	Edited changes and published document.

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1 Overview

This document describes the configuration procedures required for the Grandstream GXV/GXP/BT phones to be interoperable with BroadWorks. This includes the following Grandstream phone models:

- GXV-3140
- GXV-3000
- GXV-3005
- GXV-3006
- GXP-2000
- GXP-2010
- GXP-2020
- GXP-1200
- GXP-280
- BT-200
- BT-201

The GXV/GXP/BT phones use the Session Initiation Protocol (SIP) to communicate with BroadWorks for call control.

This guide describes the specific configuration items that are important for use with BroadWorks. It does not describe the purpose and use of all configuration items on the GXV/GXP/BT. For those details, see the *GXV/GXP/BT User Manual* supplied by Grandstream [1].

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2 Interoperability Status

This section provides the known interoperability status of the Grandstream GXV/GXP/BT with BroadWorks. This includes the version(s) tested, capabilities supported and known issues.

Interoperability testing validates that the device interfaces properly with BroadWorks via the SIP interface. Qualitative aspects of the device or device capabilities not affecting the SIP interface such as display features, performance, and audio qualities are not covered by interoperability testing. Requests for information and/or issues regarding these aspects should be directed to Grandstream.

2.1 Verified Versions

The following table identifies the verified Grandstream GXV/GXP/BT and BroadWorks versions and the month/year the testing occurred. If the device has undergone more than one test cycle, versions for each test cycle are listed, with the most recent listed first.

Compatible Versions in the following table identify specific Grandstream versions which the partner has identified as compatible and should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and may not be specifically listed here. Contact Grandstream for any questions concerning maintenance and compatible releases.

NOTE: Interoperability testing is normally performed with the latest generally available (GA) device firmware/software and the latest GA BroadWorks release and service pack at the time the testing occurs. If there is a need to use a non-verified mix of BroadWorks and device software versions, customers can mitigate their risk by self-testing the combination using the *BroadWorks SIP Access Device Interoperability Test Plan* [5].

Verified Versions Table

Date (mm/yyyy)	BroadWorks Release	Grandstream Verified Version	Grandstream Compatible Versions
10/2009	16.0	GXV-3140: 1.0.2.18	Any maintenance release of the verified versions.
07/2009	15.0	GXV-3000/GXV-3005: 1.2.1.12 GXV-3006: 1.2.1.11 GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280: 1.1.6.46 BT-200/BT-201: 1.1.6.46	Any maintenance release of the verified versions.
12/2007	14.0	GXV-3000: 1.0.0.41 GXP-2000: 1.1.2.14 BT-200: 1.1.2.14 GXP-2020: 1.1.3.5	Any maintenance release of the verified versions.

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2.2 Interface Capabilities Supported

The Grandstream GXV/GXP/BT has completed interoperability testing with BroadWorks using the *BroadWorks SIP Access Device Interoperability Test Plan* [5]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas, such as "Basic" call scenarios and "Redundancy" scenarios. Each package is composed of one or more test items which in turn are composed of one or more test cases. The test plan exercises the SIP interface between the device and BroadWorks with the intent to ensure interoperability sufficient to support the BroadWorks feature set.

The *Supported* column in the following table identifies the Grandstream GXV/GXP/BT's support for each of the items covered in the test plan packages, with the following designations:

- Yes Test item is supported.
- No Test item is not supported.
- NA Test item is not applicable to the device type.
- NT Test item was not tested.

Caveats or clarifications are identified in the *Comments* column.

Note that *DUT* in the following table refers to the *Device Under Test* which in this case is the Grandstream phone.

BroadWorks SIP Access Device Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
Basic	Call Origination	Yes	
	Call Termination	Yes	
	Session Audit	Yes	
	Session Timer	Yes	
	Ringback	Yes	
	Forked Dialog	Yes	
	Early UPDATE	No	
	Early-Session	No	
	Dial Plan	Yes	
	DTMF – Inband	Yes	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	
	Codec Renegotiation	Yes	

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BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
BroadWorks Services	Third-Party Call Control – Basic	Yes	GXV-3140 only.
	Third-Party Call Control – Advanced	Yes	Except GXV-3140.
	Voice Message Deposit/Retrieval	Yes	
	Message Waiting Indicator	Yes	
	Voice Portal Outcall	Yes	
	Advanced Alerting	Yes	Except GXV-3140.
	Calling Line ID	Yes	
	Connected Line ID	Yes	GXV-3140 only.
	Diversion Header	Yes	
	History-Info Header	Yes	
	Advice of Charge	NT	
DUT Services – Call Control Services	Call Waiting	Yes	
	Call Hold	Yes	
	Call Transfer	Yes	
	Three-Way Call	Yes	Three-Way Call Before Answer is not supported.
	Network-Based Conference	No	
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	Yes	
	Invite Authentication	Yes	
	Re-Invite/Update Authentication	Yes	
	Refer Authentication	Yes	
	Device Authenticating BroadWorks	No	
DUT Services – Fax	G711 Fax Passthrough	No	
	G711 Fax Fallback	No	
	T38 Fax Messaging	No	

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BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
DUT Services – Miscellaneous	Do Not Disturb	Yes	
	Call Forward Always	Yes	
	Call Forward Always Diversion Inhibitor	NT	
	Anonymous Call	Yes	
	Anonymous Call Block	Yes	
	Remote Restart Via Notify	Yes	
Advanced Phone Services – Busy Lamp Field	Busy Lamp Field	Yes	GXP-20xx only.
Advanced Phone Services – Feature Key Synchronization	Do Not Disturb	No	
	Do Not Disturb Ring Splash	No	
	Call Forward	No	
	Call Forward Always Ring Splash	No	
	Call Forward Always Diversion Inhibitor	NT	
	Call Center Agent Logon/Logoff	No	
Advanced Phone Services – Missed Calls Display Synchronization	Missed Calls Display Sync	NT	
Advanced Phone Services – Shared Call Appearance using Call Info	Line-Seize	No	
	Call-Info/Lamp Management	No	
	Public Hold	No	
	Private Hold	No	
	Multiple Call Arrangement	No	
	Bridging	No	
Advanced Phone Services – Shared Call Appearance using Dialog Event	Dialog Event	No	
	Hold/Retrieve	No	
	Multiple Call Arrangement	No	
	Bridging	No	
Redundancy	DNS SRV Lookup	Yes	
	Register Failover/Failback	Yes	
	Invite Failover/Failback	Yes	
	Bye Failover	Yes	

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BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
SBC/ALG	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
Video – Basic Video Calls	Call Origination	No	GXV models only.
	Call Termination	No	GXV models only.
	Call Hold	No	GXV models only.
	Call Waiting	No	GXV models only.
	Call Transfer	No	GXV models only.
Video – BroadWorks Video Services	Auto Attendant	No	GXV models only.
	Voice Messaging	No	GXV models only.
TCP	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	

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2.3 Known Issues

This section lists the known interoperability issues between BroadWorks and specific partner release(s). Issues identified during interoperability testing and known issues identified in the field are listed.

The following table provides a description of each issue and, where possible, identifies a workaround. The verified partner device versions are listed with an "X" indicating that the issue occurs in the specific release. The issues identified are device deficiencies or bugs, so typically not BroadWorks release dependent.

The *Issue Number* is a BroadSoft ExtraView partner issue number if the testing was performed by BroadSoft. If the testing was performed by the partner or a third party, the partner may or may not supply a tracking number.

For more information on any issues related to the particular partner device release, see the partner release notes.

Issue Number	Issue Title and Description	Partner Releases			
	All BroadWorks Releases	**GXV-3000 1.0.0.41, GXP-2000 / BT-200 1.1.2.14, GXP-2020 1.1.3.5**	**GXP 1.1.6.46, BT 1.1.6.46**	**GXV-3140 v1.0.2.18**	
	Click-to-Answer fails. The Grandstream phone fails to auto answer after receiving INVITE with alert-info: answer-after = 0 for click-to-answer scenarios. Workaround: None. Issue is fixed in releases after 1.1.6.46.		X		

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3 BroadWorks Configuration

This section identifies the required BroadWorks device profile for the Grandstream GXV/GXP/BT as well as any other unique BroadWorks configuration required for interoperability with the Grandstream models listed previously.

3.1 BroadWorks Device Profile Configuration

This section identifies the device profile to use when deploying the Grandstream GXV/GXP/BT with BroadWorks.

The following table identifies the required BroadWorks device identity/profile settings for interoperability between the GXV/GXP/BT and BroadWorks. For an explanation of the profile parameters, refer to the *BroadWorks Device Management Configuration Guide* [3].

For most of the following parameters, an "X" indicates the parameter function is supported and/or required. If the item is blank, it is not supported. For items where text is supplied, the text content maps directly to the web page for adding or modifying a device profile.

Grandstream Identity/Device Profile	
Signaling Address Type	Intelligent Proxy Addressing
	Standard Options
Number of Ports	GXV-3140/GXV-3000/GXV-3005/GXV-3006: 3 lines GXP-2000/GXP-2010: 4 lines GXP-2020: 6 lines GXP-1200: 2 lines GXP-280: 1 line BT-200/BT-201: 1 line
Ringback Tone/Early Media Support	Local Ringback – No Early Media
Authentication	Enabled
Registration Capable	X
Static Registration Capable	
E.164 Capable	
Trusted	
Authenticate REFER	X
RFC 3264 Hold	X
Video Capable	X (GXV models only.)
Use History-Info Header	X

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Grandstream Identity/Device Profile	
Advanced Options	
Route Advance	
Wireless Integration	
PBX Integration	
Use Business Trunking Contact	
Auto Configuration Soft Client	
Requires BroadWorks Call Waiting Tone	
Advice of Charge Capable	
Forwarding Override	
Conference Device	
Music On Hold Device	
Requires BroadWorks Digit Collection	
Requires MWI Subscription	
Auto Configuration Options	
Web Based Configuration URL Extension	http//:%BWIPADDRESS%
Auto Configuration Type	2 Config File
Reset Event	checkSync
Enable Monitoring	
CPE System File Name	gxvSystem.txt/gxpSystem.txt/btSystem.txt
Device File Format	%BWMACADDRESS%.txt

3.2 BroadWorks Configuration Steps

No special BroadWorks configuration is required.

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4 Grandstream Configuration

Grandstream GXV/GXP/BT can be configured via web GUI as well as via the Configuration File through TFTP or HTTP.

The GXV/GXP/BT accepts configuration files in a proprietary binary format, which is produced by the Grandstream configuration tool. The configuration tool creates a device configuration file based on a configuration template and the device's MAC address. All Grandstream products sample configuration templates are available on the Grandstream web site. A configuration template file contains all the configuration parameters available for a product, with comments describing allowed values of the parameters. For a detailed parameter list, refer to the corresponding firmware release configuration template [2].

When the Grandstream device boots up or reboots, it issues a request for a binary configuration file named "cfgxxxxxxxxxxxx", where "xxxxxxxxxxxx" is the MAC address of the device, for example "cfg000b820102ab". The configuration file name should be in lower case.

Grandstream offers free Configuration File Generator software for both Linux/Unix and Windows platforms. These Configuration File Generators can be downloaded from the Grandstream web site at http://www.grandstream.com/support/configurationtool.html [2].

The following examples describe how to set the parameters using a configuration file. The GXV/GXP/BT should be configured to load the configuration file each time it resets or re-synchronizes. For detailed information on automated provisioning, see the *GXV/GXP/BT User Manual* [1] and the *Grandstream Configuration Tool User Guide* [2].

The capabilities of the GXV/GXP/BT have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purpose, and applicability of the individual configuration items see the *GXV/GXP/BT Configuration Template* [2].

Configuration Files

Files Provided by Partner	Level	Description
GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 Configuration Template Example: gxv300x_config_1.2.1.12.txt gxp_config_1.1.6.46.txt	System and Subscriber	Contains configurable parameters that apply to an individual device in a deployment.
cfgMAC Example: cfg000b82000000	System and Subscriber	Binary configuration file generated from configuration template and an individual device's MAC address.

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4.1 System Level Configuration

This section describes system-wide configuration requirements for each GXV/GXP/BT to work with BroadWorks. Subscriber-specific settings are described in the next section.

Step	Command	Purpose
System Configuration Items		
Step 1	**Set SIP Proxy/Domain.** SIP Server = as.broadworks.net	Set the GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 SIP server to the Fully Qualified Domain Name (FQDN) for the BroadWorks Application Server cluster. The domain must match the domain configured for the BroadWorks subscriber's line/port domain.
Step 2	**Set Outbound Proxy.** Outbound Proxy = alg.broadworks.net	Set the Outbound Proxy to the Session Border Controller (SBC) if one is deployed between the GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 and BroadWorks. If there are redundant SBCs, set it to the FQDN for the SBC cluster.
Step 3	**Enable DNS SRV lookup.** Use DNS SRV = "Yes"	Enable DNS SRV lookups.
Step 4	**Set register mode.** SIP Registration = "Yes"	Enable SIP register.
Step 5	**Set SIP Timers.** Register Expiration = 60	The default registration period is 60 minutes.
Step 6	**Enable reliable response.** Enable 100rel = "Yes"	Reliable provisional response (PRACK) should be enabled.
Step 7	**Enable negotiated DTMF type.** Send DTMF = "via RTP (RFC 2833)"	Set the GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 to enable inband or RFC 2833 negotiated DTMF.
Step 8	**Disable local feature code services.** Enable Call Features = "No"	Disable feature access codes controlled by the device.

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Step	Command	Purpose
System Configuration Items		
Step 9	**Enable BroadSoft mode.** Special Feature = "BroadSoft"	Set the GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 in BroadSoft mode.

Step	Command	Purpose
Video Configuration (GXV models only)		
Step 1	**For GXV-3140 ONLY: Enable video for the phone.** Enable Video: ☑	Enable video for the GXV-3140 video phone.
Step 2	**For GXV-3140 ONLY: Set preferred video codec.** Preferred Video Codec: "H.264" "H.263+" "H.263"	Specify the video codec order of preference for the GXV-3140 video phone.
Step 3	**For GXV-3140 ONLY: Set payload type.** H.264 Payload Type: "99" H.263 Payload Type: "100"	Set a payload type for the video codec assigned to the GXV-3140 video phone. H.264 – Set a value between 96 and 127. The default value is 99. H.263 – Set a value between 96 and 127. The default value is 103.

4.1.1 Video Codec Support/Recommendation for the GXV-3140

The following table lists the video interoperability test results between the GXV-3140 and existing BroadWorks validated video endpoints. In addition, the table also includes results from interoperability testing between the GXV-3140 and BroadWorks video services. Each video interoperability test was either done using only video codec H.264 or H.263.

Video Device/Service	H.264	H.263
Tandberg MXP vF7.2	OK	OK
Tandberg E20 v2.0.1.193887	OK	OK
CounterPath Bria for BroadWorks v2.4.3.7 build 53306	OK	On a Bria initiated call, the Bria offers H.263 and the GXV3140 negotiates H.263/H.263+ with "sprop-parameter-sets" parameter on offer/answer. Bria immediately cancels the call with a BYE.

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Video Device/Service	H.264	H.263
Movial Communicator v7.2.22.3325	OK	On a Movial initiated call, H.263 is negotiated between the endpoints, but no video decoded and displayed by either endpoint.
GrandStream GXV3000 v1.1.3.29	OK	OK
Polycom VVX1500 v3.1.3.0439	OK	OK
Polycom HDX v2.5.0.2-3395	The GXV3140 is unable to process the incoming video when initiating a call to the Polycom HDX. The same issue applies when the GXV3140 initiates a video call hold/retrieve.	On a GXV3140 initiated call, the GXV3140 offers only H.263, but the HDX only provides H.264 on the answer/offer. However, the GVX3140 provided H.264 and the HDX provided H.263 video stream after the call is connected. The GXV3140 was no able to display the incoming video, but the HDX was able to display its incoming video. Note that the HDX does not provide an ability to only configure H.263.
LifeSize Room v4.1.0(0)	There is an issue with the GXV3140 displaying the incoming video when the LifeSize Room initiates the call.	On a GXV3140 initiated call, the GXV3140 offers only H.263, but the LifeSize provides H.264 and H.263 on the answer/offer. However, the GVX3140 provided H.264 and the LifeSize provided H.263 video stream after the call is connected. The GXV3140 was no able to display the incoming video, but the LifeSize was able to display its incoming video. On a LifeSize initiated call, the LifeSize offers both H.263 and H.264, but the GXV3140 provides H.263 on the answer/offer. H.263 video streaming occurs after connecting a call between the two. The GXV3140 was no able to display the incoming video, but the LifeSize was able to display its incoming video. Note that the LifeSize does not provide an ability to only configure H.263.
Video Auto-Attendant	OK	OK
Video On Hold	OK	OK
Video Custom Ringback	OK	OK

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4.2 Subscriber Level Configuration Parameters

This section identifies the device-specific parameters, including registration and authentication. These settings must be unique across devices to be matched with the settings for a BroadWorks subscriber.

Provisioning a subscriber to register with BroadWorks allows calls to terminate to the subscriber's line. Registration requires that a unique address of record (AoR) is provisioned on BroadWorks and the phone; provisioning an AoR on BroadWorks consists of setting the line/port parameter to a unique value within the Application Server cluster.

Grandstream GXV/GXP/BT supports 3/3/3/4/4/6/2/1/1/1 SIP accounts respectively. The following example shows how to configure subscriber elements for an account.

Step	Command	Purpose
Subscriber Configuration Items		
Step 1	**Enable a line to be used.** `Account Active = "Yes";`	Enable a line of GXV-3140/GXV-3000/GXV-3005/GXV-3006/GXP-2000/GXP-2010/GXP-2020/GXP-1200/GXP-280/BT-200/BT-201 in use.

Step 2	**Set Register User ID for a line.**
	`Example:`
	`SIP User_ID = "2405551111";`
		The register user ID must correspond with the line/port setting on BroadWorks.

Step 3	**Enable SIP Authentication for a line.**
	`Example:`
	`Authenticate ID = "1111@as.mycompany.com" ;`
	`Authenticate Password = "welcome";`
		If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings.

Step 4	**Configure display name for a line.**
	`Example:`
	`Name = "Claire Smith";`
		For a line, configure the name to be displayed on the device.

Step	Command	Purpose
Subscriber BLF Configuration Items (GXP-2000//GXP-2010/GXP-2020 only)		

Step 1	**Configure eventlist BLF for a line.**
	`Example:`
	`eventlist BLF URI = "BLF2405551111";`
		Configure eventlist BLF under Account Settings page.

Step 2	**Configure Multipurpose Key in Basic Settings page.**
	`Example:`
	`Key Mode = "eventlist BLF";`
	`Account = "Account 1";`
	`Name = "Jane";`
	`UserID = "2405551000";`
		Configure a Multipurpose Key for "eventlist BLF".
		The user ID is the monitored account SIP user ID.

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5 Enhanced IP Phone Configuration

Enhanced IP Phone Configuration is a BroadWorks feature that enables automatic generation of device configuration files, given administrator-supplied templates.

For more information on the Enhanced IP Phone Configuration feature, see the *Device Management Configuration Guide* [3].

NOTE: BroadSoft does not manage or distribute template files for use with the Enhanced IP Phone Configuration feature. Obtain template files from Grandstream or use the configuration files obtained from Grandstream for the specific GXV/GXP/BT firmware release to create template files appropriate for your installation.

Since the GXV/GXP/BT SIP phones require the configuration files be converted into a binary format, an extra step must be performed when using this feature. After the configuration files have been sent to the TFTP server and before the phone is reset, the configuration files must be converted to binary format using Grandstream's configuration tool. For detailed information on automated provisioning, check the *Grandstream Configuration Tool and Templates* [2].

The GXV/GXP/BT uses only a phone-specific file to configure the device. However, the Enhanced IP Phone Configuration feature requires a system and a phone-specific file for each device. To satisfy the system file requirement, an empty file (*gxpDefault.txt, gxvDefault.txt, btDesfult.txt)* will need to be uploaded to BroadWorks as the system file. This file will be sent to the FTP server but will not actually be used for the configuration file generation. The group template file is used to build the configuration files for the devices of this device type assigned to the group. For a sample GXV/GXP/BT group template file see *Appendix A: Sample GXV/GXP/BT Configuration File*.

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Appendix A: Sample Grandstream Configuration Files

NOTE: The following samples are examples and should be used as a reference only. DO NOT CUT AND PASTE THESE EXAMPLES TO GENERATE YOUR CONFIGURATION FILES. Use the configuration files obtained from Grandstream with the specific release to generate your configuration files.

System Default Parameters:

NOTE: This is an example file and should be used for reference only.

```
# SIP Default Generic Configuration Parameters

################################################
# Account 1                                    #
# GXP–280/BT-200/BT201 supports Account 1 only #
################################################

# SIP Server
P47 = as.broadworks.net

# Outbound Proxy
P48 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P103 = 1

# SIP Registration. 0 - no, 1 - yes
P31 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P32 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P73 = 1

# Enable 100rel. 0 - no, 1 - yes
P272 = 1

# Enable Call Features. 0 - no, 1 – yes
P191 = 0

# Special Feature. 102 – BroadSoft
P198 = 102

####################
# Account 2        #
####################

# SIP Server
P402 = as.broadworks.net
```


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```
# Outbound Proxy
P403 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P408 = 1

# SIP Registration. 0 - no, 1 – yes
P410 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P412 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P416 = 1

# Enable 100rel. 0 - no, 1 - yes
P435 = 1

# Enable Call Features. 0 - no, 1 – yes
P420 = 0

# Special Feature. 102 – BroadSoft
P424 = 102

##############################################################
# GXV/GXP-2000/GXP-2010/GXP-2020 only: Account 3             #
##############################################################

# SIP Server
P502 = as.broadworks.net

# Outbound Proxy
P503 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P508 = 1

# SIP Registration. 0 - no, 1 - yes
P510 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P512 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P516 = 1

# Enable 100rel. 0 - no, 1 - yes
P535 = 1

# Enable Call Features. 0 - no, 1 – yes
P520 = 0

# Special Feature. 102 – BroadSoft
P524 = 102

##############################################################
```


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```
# GXP-2000/GXP-2010/GXP-2020 only: Account 4       #
##########################################################

# SIP Server
P602 = as.broadworks.net

# Outbound Proxy
P603 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P608 = 1

# SIP Registration. 0 - no, 1 - yes
P610 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P612 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P616 = 1

# Enable 100rel. 0 - no, 1 - yes
P635 = 1

# Enable Call Features. 0 - no, 1 – yes
P620 = 0

# Special Feature. 102 – BroadSoft
P624 = 102

###################################
# GXP-2020 only: Account 5       #
###################################

# SIP Server
P1702 = as.broadworks.net

# Outbound Proxy
P1703 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P1708 = 1

# SIP Registration. 0 - no, 1 - yes
P1710 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P1712 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P1716 = 1

# Enable 100rel. 0 - no, 1 - yes
P1735 = 1

# Enable Call Features. 0 - no, 1 – yes
P1720 = 0
```


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```
# Special Feature. 102 – BroadSoft
P1724 = 102

###################################
# GXP-2020 only: Account 6        #
###################################

# SIP Server
P1802 = as.broadworks.net

# Outbound Proxy
P1803 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P1808 = 1

# SIP Registration. 0 - no, 1 - yes
P1810 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P1812 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P1816 = 1

# Enable 100rel. 0 - no, 1 - yes
P1835 = 1

# Enable Call Features. 0 - no, 1 – yes
P1820 = 0

# Special Feature. 102 – BroadSoft
P1824 = 102
```

Phone-Specific Parameters:

NOTE: This is an example file and should be used for reference only.

```
# SIP Device-specific Configuration Parameters

##################################################
# Account 1                                      #
# GXP-280/BT-200/BT-201 supports Account 1 only  #
##################################################

# Account Active (In Use). 0 - no, 1 - yes
P271 = 1

# SIP User ID
P35 = 2405551111

# Authenticate ID
P36 = 1111@as.mycompany.com
```


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```
# Authenticate password
P34 = welcome

# Display Name
P3 = Claire Smith

####################
# Account 2        #
####################

# Account Active (In Use). 0 - no, 1 - yes
P401 =

# SIP User ID
P404 =

# Authenticate ID
P405 =

# Authenticate Password
P406 =

# Display Name
P407 =

############################################################
# GXV/GXP-2000/GXP-2010/GXP-2020 only: Account 3         #
############################################################

# Account Active (In Use). 0 - no, 1 - yes
P501 =

# SIP User ID
P504 =

# Authenticate ID
P505 =

# Authenticate Password
P506 =

# Display Name
P507 =

#########################################################
# GXP-2000/GXP-2010/GXP-2020 only: Account 4         #
#########################################################

# Account Active (In Use). 0 - no, 1 - yes
P601 =

# SIP User ID
P604 =

# Authenticate ID
P605 =

# Authenticate Password
P606 =
```


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```
# Display Name
P607 =

###################################
# GXP-2000 only: Account 5        #
###################################

# Account Active (In Use). 0 - no, 1 - yes
P1701 =

# SIP User ID
P1704 =

# Authenticate ID
P1705 =

# Authenticate Password
P1706 =

# Display Name
P1707 =

###################################
# GXP-2020 only: Account 6        #
###################################

# Account Active (In Use). 0 - no, 1 - yes
P1801 =

# SIP User ID
P1804 =

# Authenticate ID
P1805 =

# Authenticate Password
P1806 =

# Display Name
P1807 =
```

Group Template File:

NOTE: This is an example file and should be used for reference only.

```
#####################################################
# SIP Default Generic Configuration Parameters    #
#####################################################

#################################################
# Account 1                                     #
# GXP-280/BT-200/BT-201 supports Account 1 only #
#################################################

# SIP Server
P47 = as.broadworks.net
```


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```
# Outbound Proxy
P48 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P103 = 1

# SIP Registration. 0 - no, 1 - yes
P31 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P32 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P73 = 1

# Enable 100rel. 0 - no, 1 - yes
P272 = 1

# Enable Call Features. 0 - no, 1 – yes
P191 = 0

# Special Feature. 102 – BroadSoft
P198 = 102

####################
# Account 2        #
####################

# SIP Server
P402 = as.broadworks.net

# Outbound Proxy
P403 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P408 = 1

# SIP Registration. 0 - no, 1 – yes
P410 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P412 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P416 = 1

# Enable 100rel. 0 - no, 1 - yes
P435 = 1

# Enable Call Features. 0 - no, 1 – yes
P420 = 0

# Special Feature. 102 – BroadSoft
P424 = 102

############################################################
```


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```
# GXV/GXP-2000/GXP-2010/GXP-2020 only: Account 3        #
############################################################

# SIP Server
P502 = as.broadworks.net

# Outbound Proxy
P503 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P508 = 1

# SIP Registration. 0 - no, 1 - yes
P510 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P512 = 60

# Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P516 = 1

# Enable 100rel. 0 - no, 1 - yes
P535 = 1

# Enable Call Features. 0 - no, 1 – yes
P520 = 0

# Special Feature. 102 – BroadSoft
P524 = 102

########################################################
# GXP-2000/GXP-2010/GXP-2020 only: Account 4       #
########################################################

# SIP Server
P602 = as.broadworks.net

# Outbound Proxy
P603 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P608 = 1

# SIP Registration. 0 - no, 1 - yes
P610 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P612 = 60

# # Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P616 = 1

# Enable 100rel. 0 - no, 1 - yes
P635 = 1

# Enable Call Features. 0 - no, 1 – yes
P620 = 0
```


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```
# Special Feature. 102 – BroadSoft
P624 = 102

##################################
# GXP-2020 only: Account 5       #
##################################

# SIP Server
P1702 = as.broadworks.net

# Outbound Proxy
P1703 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P1708 = 1

# SIP Registration. 0 - no, 1 - yes
P1710 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P1712 = 60

# # Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P1716 = 1

# Enable 100rel. 0 - no, 1 - yes
P1735 = 1

# Enable Call Features. 0 - no, 1 – yes
P1720 = 0

# Special Feature. 102 – BroadSoft
P1724 = 102

##################################
# GXP-2020 only: Account 6       #
##################################

# SIP Server
P1802 = as.broadworks.net

# Outbound Proxy
P1803 = alg.broadworks.net

# Use DNS SRV. 0 - no, 1 - yes.
P1808 = 1

# SIP Registration. 0 - no, 1 - yes
P1810 = 1

# Register Expiration (in minutes. default 1 hour, max 45 days)
P1812 = 60

# # Send DTMF. 8 - in audio, 1 - via RTP, 2 - via SIP INFO
# 11 - In Audio & RTP & SIP INFO, 9 - In Audio & RTP
# 10 - IN Audio & SIP INFO, 3 - RTP & SIP INFO
P1816 = 1
```


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```
# Enable 100rel. 0 - no, 1 - yes
P1835 = 1

# Enable Call Features. 0 - no, 1 – yes
P1820 = 0

# Special Feature. 102 – BroadSoft
P1824 = 102


#####################################################
# SIP Device-specific Configuration Parameters    #
#####################################################

#################################################
# Account 1                                     #
# GXP-280/BT-200/BT-201 supports Account 1 only #
#################################################

# Account Active (In Use). 0 - no, 1 - yes
P271 = 1

# SIP User ID
P35 = %BWLINEPORT-1%

# Authenticate ID
P36 = %BWAUTHUSER-1%

# Authenticate password
P34 = %BWAUTHPASSWORD-1%

# Display Name (John Doe)
P3 = %BWCLID-1%

####################
# Account 2        #
####################

# Account Active (In Use). 0 - no, 1 - yes
P401 = 1

# SIP User ID
P404 = %BWLINEPORT-2%

# Authenticate ID
P405 = %BWAUTHUSER-2%

# Authenticate Password
P406 = %BWAUTHPASSWORD-2%

# Display Name (John Doe)
P407 = %BWCLID-2%

#############################################################
# GXV/GXP-2000/GXP-2010/GXP-2020 only: Account 3        #
#############################################################

# Account Active (In Use). 0 - no, 1 - yes
P501 = 1

# SIP User ID
```


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```
P504 = %BWLINEPORT-3%

# Authenticate ID
P505 = %BWAUTHUSER-3%

# Authenticate Password
P506 = %BWAUTHPASSWORD-3%

# Display Name (John Doe)
P507 = %BWCLID-3%

##########################################################
# GXP-2000/GXP-2010/GXP-2020 only: Account 4             #
##########################################################

# Account Active (In Use). 0 - no, 1 - yes
P601 = 1

# SIP User ID
P604 = %BWLINEPORT-4%

# Authenticate ID
P605 = %BWAUTHUSER-4%

# Authenticate Password
P606 = %BWAUTHPASSWORD-4%

# Display Name (John Doe)
P607 = %BWCLID-4%

#####################################
# GXP-2020 only: Account 5          #
#####################################

# Account Active (In Use). 0 - no, 1 - yes
P1701 = 1

# SIP User ID
P1704 = %BWLINEPORT-5%

# Authenticate ID
P1705 = %BWAUTHUSER-5%

# Authenticate Password
P1706 = %BWAUTHPASSWORD-5%

# Display Name (John Doe)
P1707 = %BWCLID-5%

#####################################
# GXP-2020 only: Account 6          #
#####################################

# Account Active (In Use). 0 - no, 1 - yes
P1801 = 1

# SIP User ID
P1804 = %BWLINEPORT-6%

# Authenticate ID
P1805 = %BWAUTHUSER-6%
```


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```
# Authenticate Password
P1806 = %BWAUTHPASSWORD-6%

# Display Name (John Doe)
P1807 = %BWCLID-6%
```

GXV-3140 Video Phone Template File:

NOTE: This is an example file and should be used for reference only.

```
##############################################################################
#
## Configuration template for GXV-3140
##############################################################################
#


##############################################################################
##  Account1 Settings
##############################################################################

########################################################################
##  Account1 General Settings
########################################################################
# Account Active. 0- NO, 1- YES
P271 = 1

# Account Name
P270 = Interop Lab

# SIP Server
P47 = intas.broadworks.net:5060

# SIP User ID
P35 = 2405555018

# Authenticate ID
P36 = 2405555018

# Authenticate Password
P34 = 123456

# Voicemail UserID (User ID/extension for 3rd party voice mail system)
P33 = *62

# Name (Display name :John Doe)
P3 = 2405555018

# User ID is phone number.  0- NO, 1- YES
P63 = 1

########################################################################
##  Account1 Network Settings
########################################################################
# Outbound Proxy
P48 = intas.broadworks.net:5060

# DNS Mode. 0 - A Record, 1 - SRV, 2 - NAPTR/SRV.
P103 = 1

# NAT Traversal. 0 - No, 1 - STUN, 2 - keep-alive, 3- UPnP, 4- Auto
```


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```
P52 = 0

# Proxy-Require
P197 = intas.broadworks.net:5060

##############################################################################
##  Account1 SIP Settings
##############################################################################
# SIP Registration. 0 - No, 1 - Yes.
P31 = 1

# Unregister On Reboot.0 - No, 1 - Yes.
P81 = 0

# Register Expiration (m)(in minutes. default 1 hour, max 45 days)
P32 = 5

# Wait Time Retry Registration (s)(in seconds. Between 1-3600, default is 20)
P138 = 20

# Local SIP Port (default 5060)
P40 = 5060

# SUBSCRIBE for MWI (Whether or not send SUBSCRIBE for Message Waiting
Indication) 0 - No, 1 - Yes.
P99 = 0

# Session Expiration (in seconds. default 180 seconds. Allowed value: 90-65535)
P260 = 180

# Min-SE (s)(default 90 seconds)
P261 = 90

# UAC Specify Refresher. 0 - omit, 1 - UAC, 2 - UAS
P266 = 1

# UAS Specify Refresher. 1 - UAC, 2 - UAS
P267 = 2

# Force INVITE(Always refresh with INVITE instead of UPDATE even when remote
party supports UPDATE) 0 - no, 1 - yes
P265 = 0

# Caller Request Timer(Request for timer when calling) 0 - no, 1 - yes
P262 = 0

# Callee Request Timer(Request for timer when called. i.e. if remote party
supports timer but did not request for one) 0 - no, 1 - yes
P263 = 0

# Force Timer (Still use timer when remote party does not support timer) 0 - no,
1 - yes
P264 = 0

# SIP Transport (0- UDP , 1- TCP, 2 -TLS)
P130 = 0

# Symmetric RTP (0- no, 1 -yes)
P291 = 1

# Support SIP Instance ID (0- no, 1 -yes)
P288 = 1

# Validate Incoming Messages (0- no, 1 -yes)
P4340 = 0

# SIP T1 Timeout. RFC 3261 T1 value (RTT estimate)
# 50 - 0.5 sec, 100 - 1 sec, 200 - 2 sec.
P209 = 50
```


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```
# SIP T2 Timeout. RFC 3261 T2 value. The maximum retransmit interval for non-
INVITE requests and INVITE responses.
# 200 - 2 sec, 400 - 4 sec, 800 - 8 sec. Default 400.
P250 = 400

# Remove OBP from route (0- no, 1 -yes)
P4562 = 0

##############################################################################
##  Account1 Codec Settings
##############################################################################

# Enable Video (0- no, 1 -yes)
P292 = 1

# DTMF in audio (0 - no, 1 -yes)
P850 = 1

# DTMF via RFC2833 (0 - no, 1 -yes)
P851 = 1

# DTMF via SIP INFO (0 - no, 1 -yes)
P852 = 0

# DTMF Payload Type
P79 = 101

# Preferred Vocoder
# 0 - PCMU, 2 - G.726-32, 3 - GSM, 4 - G.723.1, 8 - PCMA,
# 9 - G.722, 18 - G.729A/B

# First codec.
P57 = 0

# Second codec.
P58 = 8

# Third codec.
P59 = 4

# Forth codec.
P60 = 18

# Fifth codec.
P61 = 9

# Sixth codec.
P62 = 3

# Seventh codec.
P46 = 0

# Eighth codec.
P98 = 0

# Preferred Video Codec:   99 - H.264, 34 - H.263 103 - H.263+ (1998)
# Choice 1
P295 = 99

# Choice 2
P296 = 103

# H.264 Payload Type
P293 = 99


# Silence Suppression. 0-No, 1 -Yes.
P50 = 0
```


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```
# Voice Frames per TX.
P37 = 2

# G723 Rate (0- 6.3 kbps, 1- 5.3kbps)
P49 = 1

# Jitter Buffer Type (0-Fixed , 1 -Adaptive)
P133 = 1

# Jitter Buffer Length (0-Low, 1-Medium, 2- High)
P132 =1

##############################################################################
##  Account1 Call Settings
##############################################################################

# Dial Plan Prefix
P66 =

# Dial Plan Maxlength = 128, default is allow all {x+|*x+}
P290 = {x+|*x+}

# Early Dial.0 - no, 1 - yes
P29 = 0

# Refer-To Use Target Contact. 0 - no, 1 - yes
P135 = 0

# Auto Answer.0 - no, 1 - yes, 2 - Intercom/Paging
P90 = 0

# Send Anonymous. 0 - no, 1 - yes ((caller ID will be blocked if set to Yes)
P65 = 0

# Anonymous Call Rejection.  0 - no (default),  1 - yes
P129 = 0

# Special Feature  100 - Standard, 108 - CBCOM, 109 - RNK
P198 = 100

# Enable Call Features. 0 - no, 1 - yes.
P191 = 1

# Delayed Call Forward Wait Time (s). Default is 20 seconds, maxlength = 5
P139 = 20

# No Key Entry Timeout (s)
P6023 = 4

# Transfer on Conference Hangup. 0 - no, 1 - yes
P4560 = 0


# Ring Timeout. (10-300, default is 60 seconds)
P185 = 60

# Use # as Dial Key. 0 - no, 1 - yes.
P72 = 1

##############################################################################
##  Account2 Settings
##############################################################################
.
.
.

##############################################################################
##  Account3 Settings
```


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```
##############################################################################
.
.
.
```


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http://www.grandstream.com/support/gxp_series/general/documents/gxp_usermanual_english.pdf,

http://www.grandstream.com/support/bt_series/bt20x/documents/bt20x_usermanual_english.pdf

And graphical user interfaces (GUI):

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